Original Article

Clinicopathological Study of Surgically Important Parasitic Diseases in Rangpur Medical College Hospital

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Abstract

Background:
Parasites are of worldwide distribution, but environmental factors, social customs, and habits of persons greatly influence the distribution of parasites. It is very important to find out the incidence and clinico-pathological presentation of surgically important parasitic disease. This study is intended to describe the occurrence and management of surgically important parasitic diseases and their outcome in our country in the setting of Rangpur Medical College Hospital.

Methods:
This observation type of cross-sectional study was carried out at the Department of Surgery and Department of pediatrics surgery of Rangpur Medical College Hospital, Rangpur from July 2012 to December 2012 over a period of six months. Total 75 patients having different parasitic diseases admitted into the assigned department of Rangpur medical college hospital during the study period were evaluated on the basis of comprehensive history, clinical examinations, and relevant investigations.

Results:
Among the parasites concerned in this study top of the list was occupied by Ascaris lumbricoides, which was responsible for 29 (38.67%)of cases. The second common organism was Entamoeba histolytica, which was responsible for 26 (34.67%) cases. Out of 75 cases, the amoebic liver abscess was found most common disease in 26 (34.67%) cases followed by intestinal obstruction due to Ascaris bolus in 17 (22.67%) cases. The liver was found most common organ affected in 31(41.33%) cases followed by small gut in 17 (22.67%) cases and lymphatic system in 14(18.67%) cases. Overall 53(71%) cases were presented acutely. Out of 75 cases, 28 (37.33%) cases required operative treatment and the rest 47(62.67%) cases were treated conservatively. 71 (94.67%) patients were recovered completely without any complication and 4 (5.33%) patients were recovered with complication. There was no mortality in this study.

Conclusion:
Surgical complications of ascariasis appeared as a commonest parasitic disease of surgical practice in our country followed by amoebic liver abscess, a surgical manifestation of filariasis, and hydatid cyst of the liver.

Keywords: Parasitic disease, Surgically important, Ascariasis, Amoebic liver abscess

Introduction:

Parasites are of worldwide distribution, but environmental factors, social customs, and habits of persons greatly influence the distribution of parasites. In Bangladesh, parasitic infestations are endemic due to environmental conditions like plenty of rainfall, presence, and habit of a suitable host, easy escape from the host, and environmental conditions favoring the survival of the parasites outside of the host. The various diseases caused by parasites can be managed abscess, hydatid cyst of the liver, biliary ascariasis, and surgical complication of filariasis. Out of all parasitic diseases, Ascaris lumbricoides infestation occupies the top of the list in Bangladesh.[1] It is estimated that 10% of the world's population is infested with *Entamoeba histolytica*.[2] A common surgical complication of E. histolytica infestation is an amoebic liver abscess.

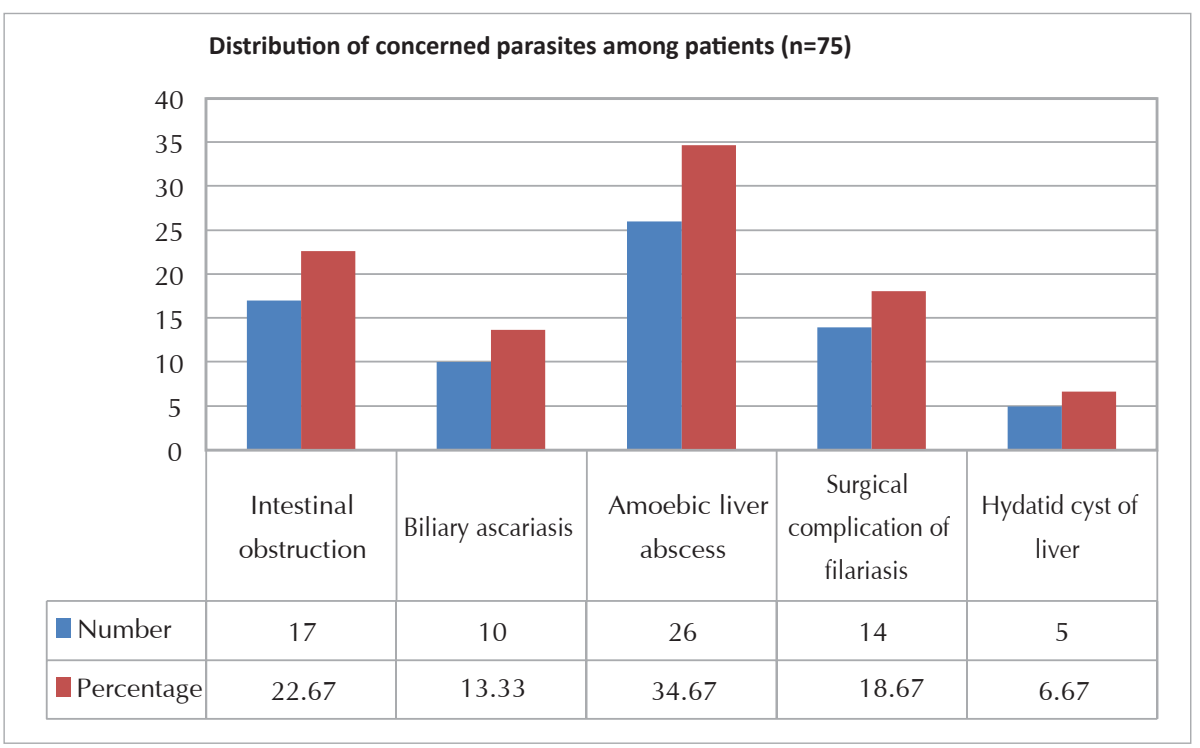
In the tropics, about 2 to 10% (average 5%) of individuals infested with E. histolytica suffers from hepatic complication.[3] Hydatid cyst of the liver and other organs caused by E. granulosus also occurs in Bangladesh. Among complications, secondary infection and ruptures are the most common. Lymphatic filariasis (LF) or elephantiasis is the most debilitating and disfiguring scourge among all diseases.[4] It is one of the most major public health problems in many South-Asian countries. Very few studies have so far been carried out on this aspect to address surgical complications of parasitic diseases. Also, the scenario is not clear from our perspective. So it is very important to find out the scenario in surgically important common parasitic disease. This study was intended to find out the incidence of parasitic diseases in surgical practice in Rangpur Medical College Hospital.

Methods:

This observation type of cross-sectional study was carried out at the Department of Surgery and Department of pediatric surgery of Rangpur Medical College Hospital, Rangpur from July 2012 to December 2012 over a period of six months. Total 75 patients having different parasitic diseases admitted into the assigned department of rangpur medical college hospital during the study period were evaluated on the basis of comprehensive history, clinical examinations, and relevant investigations. Some cases were also diagnosed as parasitic origin per-operatively. All the information was recorded in the fixed protocol. Collected data was classified, edited, coded, and entered into the computer for statistical analysis by using MS EXCEL. The study and procedure were explained to the patients and written consent was obtained from the patients. Hospital authorities were informed about the study and permission was obtained.

Results:

Among the common parasites concerned with surgical diseases in this study top of the list was occupied by Ascaris lumbricoides, which was responsible for 29 (38.67%)of cases. The second common organism in this study group was *Entamoeba histolytica*, which was responsible for 26 (34.67%) cases (Figure-1). Out of 75 cases, the amoebic liver abscess was found most common parasitic disease of surgical importance followed by intestinal obstruction due to Ascaris bolus (Figure-2).



	Intestinal obstruction	Biliary ascariasis	Amoebic liver abscess	Surgical complication of filariasis	Hydatid cyst of liver
Number	17	10	26	14	5
Percentage	22.67	13.33	34.67	18.67	6.67

Figure-1: Distribution of concerned parasites among patients (n=75)

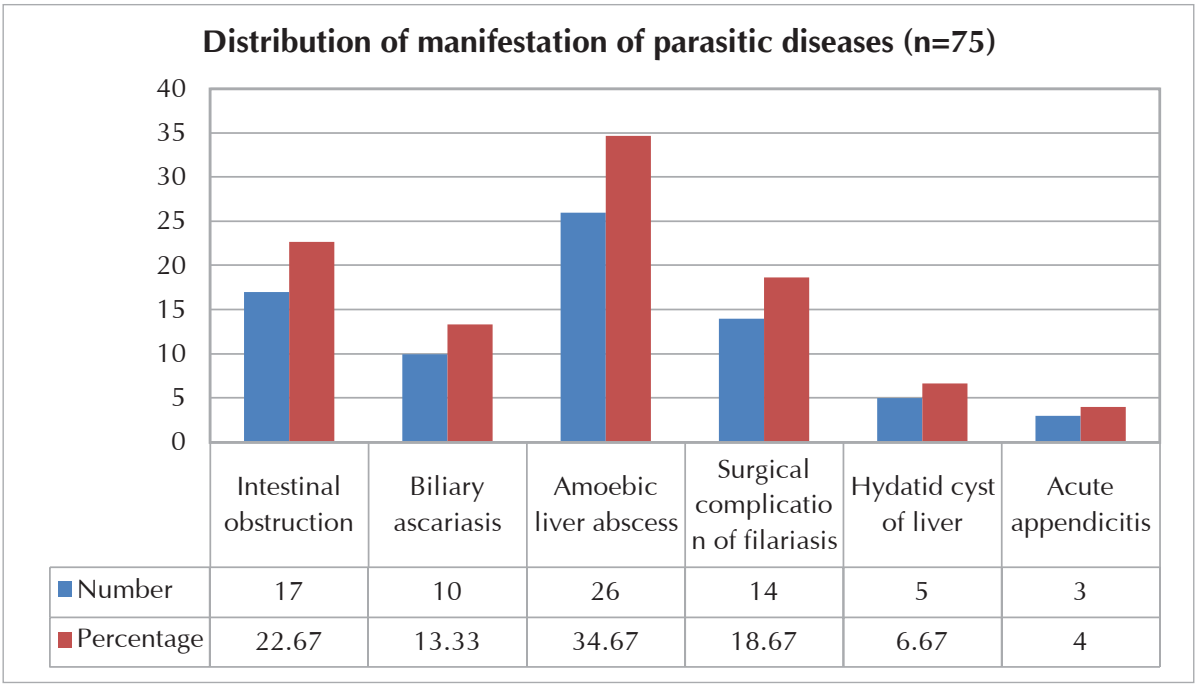


Figure-2: Distribution of manifestation of parasitic diseases (n=75)

The liver was found most common organ affected by parasites. Out of 75 studied cases, the liver was the target organ in 31 (41.33%) cases followed by small gut in 17 (22.67%) cases and the lymphatic system in 14 (18.67%) cases (Figure-3).

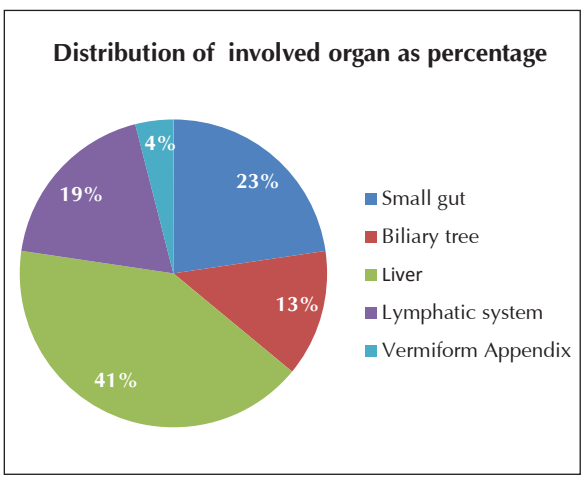


Figure-3: Distribution of involved organ as percentage

All cases of intestinal obstruction and acute appendicitis presented with acute abdomen. Most cases of biliary ascariasis and amoebic liver abscess were also admitted with the acute presentation. All cases of hydatid cyst and the majority of cases of filariasis had a chronic presentation (Table-I).

Table-I: Clinical presentation of diseases during admission

Name of disease	Acute presentation		Chronic presentation	
	Number	Percentage	Number	Percentage
Intestinal obstruction (n=17)	17	100%	0	0%
Amoebic liver abscess (n=26)	22	85%	4	15%
Biliary ascariasis (n=10)	8	80%	2	20%
Hydatid cyst (n=5)	0	0%	5	100%
Filariasis (n=14)	3	21%	11	79%
Acute Appendicitis (n=3)	3	100%	0	0%
Total	53	71%	22	29%

Discussion:

The various disorders caused by parasites are managed medically, but some of them are directly related to surgical management. The study of parasitic diseases of surgical importance is a mere attempt to find out the frequency of parasitic diseases in our surgical practice, common parasitic diseases, common target organs involved by these diseases, and to evaluate the clinical presentation of these diseases, their management, and

outcome. The present study may not be the representation of the overall picture in the general population. Ascaris lumbricoides may give rise to a variety of surgical complications. Intestinal obstruction is the most common; extra-intestinal migration to the biliary tree and vermiform appendix also gives rise to biliary ascariasis and acute appendicitis respectively.[5] In this study, 29(38.67%) cases were found infested with Ascaris lumbricoides. 17(22.67%) cases of intestinal obstruction due to Ascaris bolus, 10(13.33%) cases of biliary ascariasis, and 2(2.26%) cases of acute appendicitis were found. Kuntz found 83% of rural children are affected with roundworm.[6] Whereas Muttalib MA reported Ascaris infestation in 92% of children under 14 years in rural areas and 27.6% children in urban areas and among Dhaka university students it was 40.6%.[7] In the present study, intestinal obstruction was found most commonly among the children of 5-9 year age group; 12(70.58%) cases out of 17, whereas Upadhyaya et al found that 2-6 year age group were most affected (61.9%).[8] This difference may be due to deworming program conducted by Govt. of Bangladesh for children of 2-5 years of age.In the present study, among 10 patients of biliary ascariasis 6(60%) patients were treated conservatively and 04(40%) patients by operative treatment. Khurooin a series of 21 patients with biliary ascariasis has made a similar observation,14(67%)patients improved with conservative treatment and 07(33%) patients needed operative intervention.[9] Biswas also described a similar result in his study of 18 patients; 12(66.67%) were treated conservatively and 06(33.33%) by surgical intervention.[10] In this study out of 29 cases of surgical complications of ascariasis 02 cases were diagnosed as acute appendicitis. 01 case of acute appendicitis was also found due to pinworm infestation of the appendix. In another study of 145 cases of surgical complications of ascariasis, reported 10 cases were due to acute appendicitis caused by Ascaris in appendix.[11] Louwin a study of 100 cases of surgical complications of Ascaris lumbricoides, reported 02 cases was due to acute appendicitis caused by Ascaris in appendix.[12] In this study, 26 cases were diagnosed as amoebic liver abscess. Among them, 17(65.38%) cases were treated conservatively by amoebicidal drug and needle aspiration under ultrasonic guidance, and the rest 9(34.42%) cases needed operative procedure. Whereas in a study of 51 cases of amoebic liver abscess Shabbir et al treated 45(88.25%) cases conservatively and 6(11.75%) cases surgically.[13] The current study shows a higher rate of the operative procedure. This may be due to the failure of the aspiration under ultrasonic guidance. During the present study period, 5 patients were diagnosed as hydatid cyst of liver, while Karim SS et al described 23 cases of hydatid disease during the period of January 1989 to June 1991.[14] All 05(100%) patients of hydatid cyst of the present study needed surgical intervention although the study of Moniruzzaman and Khan NI shows surgical intervention required in 04(80%) patients out of 05 patients.[15] Though the number of filarial patients is very high in this region only 14 cases of surgical complications of filariasis were found in the present study. In the year 2009, the number of patients with the lower limb, upper limb, and scrotal swelling caused by filariasis in the Rangpur district was respectively 4555, 1837, and 6137[16].

Conclusion:

Surgical complications of ascariasis appeared as a commonest parasitic disease of surgical practice in our country followed by amoebic liver abscess, a surgical manifestation of filariasis, and hydatid cyst of liver. These diseases are concerned with a lot of health problems in our country and mortality and morbidity of these diseases have great influences on our daily life.

Limitation:

This was a single-center study but parasitic diseases are endemic in different parts of this country. So the study may limit the ability to reflect the generalized population and other ethnic groups. Also, the small sample size was a drawback. A modest attempt may be made to a multi-center study of different parasitic diseases in Bangladesh.

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